IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

  Seal, et al.

Serial No.: **09/151,666**

Filed: September 11, 1998

Confirmation No.: 8180

Group Art Unit: 3623

Examiner: Meineck Diaz, Susanna

Docket No. 190251-1740

For: **OUTSIDE PLANT CONSTRUCTION MANAGEMENT SYSTEMS AND METHODS**

RESPONSE TO REQUIREMENT FOR INFORMATION
UNDER 37 U.S.C. §1.105

Mail Stop
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

  A Requirement for Information under 37 U.S.C. §1.105 mailed February 24, 2004 has been carefully considered. A Response to the Requirement for Information is addressed below.

I. Interview Summary

  Applicants first wish to express their sincere appreciation for the time that Examiner spent with Applicants' representative, Theresa James, in a telephone discussion on March 10, 2004. During the discussion, Ms. James requested a complete copy of the last Office Action since several pages of the Office Action were missing when received by Applicants. Examiner agreed to fax a courtesy copy of the last Office Action and restart the period for response, which is two months for a Requirement for Information under 37 CFR.1.105. Thus, the response will be due on May 18, 2004.

  Examiner and Applicants' representative, Minh N. Nguyen, had a telephone discussion on May 18, 2004. The discussion involved clarifying the requests for information, particularly information on the JMOS and MTR systems. Applicants respectfully submit that Applicants

have provided the information in this response as requested by Examiner. Applicants assume that an IDS is not required because the response to the Requirement for Information under 37 U.S.C. §1.105 is sufficient. However, if Examiner would like an IDS for the JMOS and MTR documents, Applicants would gladly provide it.

II.   Response to Information Regarding JMOS and MTR

In the Office Action, Examiner requested a document detailing the functionality of the Job Management Operations System (JMOS), the Mechanized Time Reporting (MTR) system, and the interface between the two systems, as disclosed in the background on pages 1-3. The JMOS system and the MTR system were known and used by others more than one year before the filing date of the present disclosure, which is September 11, 1998. Applicants have attached a document entitled, "Operations Systems Job Management Operations System (JMOS) System Description", as Appendix A, and a document describing the MTR system as Appendix B.

III.   Names of Any Additional Products or Services

Applicants respectfully submit that after Applicants filed the present disclosure with the USPTO, the present disclosure was marketed under the name, TOPAS (Total Outside Plant Administrative System).

IV.   Information Regarding Initial Public Disclosure of OSPCM

In the Office Action, Examiner requested information regarding the initial public disclosure of OSPCM. Examiner located a resume on the Internet that is dated August 22, 1996, which recited as follows:

> Out Side Plant Construction Management is a multiteam JAD/RAD/RIP project. I was bought on board to help the Infrastructure team solve various technical problems related to tying the OSPCM pieces together with each other and existing systems. My part on the infrastructure team went away after Client decided that phase II would be done as a turnkey solution by one of their vendors. The technical environment included Visual C++, Visual Basic, HP/UX (HP 9000 series database servers), Informix 7.xx, IEF, IBM CMVC version 2, BellSouth Navigator, True Grid, Sherridan Data Widgets, Novel lans, and Exceed for HP access from 486DX PCs.

During the development of the present disclosure, contractors were hired to implement OSPCM. The contractors were obligated to assign proprietary rights to Assignee. Further, the contractors were under the obligation of a non-disclosure agreement. Although the resume owner described his involvement with OSPCM, he did not provide a written description of the present disclosure, nor did he enable those skilled in the art to make the present disclosure in his resume. According to Applicants' knowledge, Applicants respectfully submit that the initial public disclosure of the present disclosure was in December 1997.

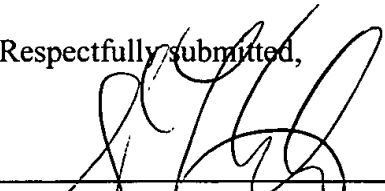V.   Statement of Specific Improvements over the Disclosed References

In the Office Action, Examiner requested that Applicants state the specific improvements of the claimed subject matter in the pending claims over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements.

Applicants respectfully submit that nowhere do the JMOS system and the MTR system, either individually or in combination, disclose, teach, or suggest the features of independent claims 5, 22, 38, 39, 40, and 42, which recites a bidding process.

Applicants respectfully submit that the JMOS system and the MTR system, either individually or in combination, do not disclose, teach, or suggest at least, among others, the features of "if the billings vary from a billing expectation of the system, the variations are sent to a supervisor for approval, wherein upon approval of the supervisor or no variations, the billing and reporting application prepares an invoice for payment", as recited in claim 16, and the features of "if the billings vary from a billing expectation of the system, the variations are sent to a supervisor for approval, wherein upon approval of the supervisor or no variations, preparing an invoice for payment", as recited in claim 32.

Applicants respectfully submit that the JMOS system and the MTR system, either individually or in combination, do not disclose, teach, or suggest at least, among others, the features of "random sampling of the completed at least one task, the inspection application being capable of generating inspection schedules and managing results of the inspection", as recited in claim 19, and the features of "performing a random sampling of at least one completed task; and generating inspection schedules and managing results of the inspections", as recited in claim 35.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that the below listed items are being deposited with the U.S. Postal Service as first class mail in an envelope addressed to:

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on _____5/18/04_____

_____
Jeffrey R. Kuester

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For: **Outside Plant Construction Management Systems and Methods**

The following is a list of documents enclosed:

Return Postcard
Response to Requirement for Information Under 37 USC §1.105
Exhibit A
Exhibit B

Further, the Commissioner is authorized to charge Deposit Account No. 20-0778 for any additional fees required. The Commissioner is requested to credit any excess fee paid to Deposit Account No. 20-0778.

APPENDIX A

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OPERATIONS SYSTEMS JOB MANAGEMENT OPERATIONS SYSTEM (JMOS) SYSTEM DESCRIPTION

1. GENERAL

1.1 The Job Management Operations System (JMOS) is a computer system designed to help in the administration and control of outside-plant construction jobs. The system also will serve as a means for reporting construction time and materials to accounting. JMOS supports the Construction Force Management (Method) System.

1.2 The purpose of JMOS is to make the job administration process more efficient by reducing the need for manual data computations, and multiple handling of data in the Distribution Services Design Center (DSDC), the Outside Plant Administrative Center/the Outside Plant Control Center (OPAC/OPCC), the Material Management organization and the Accounting or Comptroller's organization. In addition, JMOS enables reduction of material inventories and construction intervals by simplifying and improving the scheduling of personnel, equipment and materials.

1.3 When this practice is reissued, the reason will be stated in this paragraph.

2. OVERVIEW OF JMOS

2.1 JMOS consists of a set of computer programs and databases that reside on a mainframe computer. Users of JMOS enter information and interact with the computer by using cathode ray tube/keyboard (CRT) terminals located in the DSDC and OPAC/OPCC. Other terminals in the staff offices and Data Center of the TELCo also can access the system for administrative purposes. Printed copies of reports can be requested at local printers by issuing a request via the CRT terminals.

2.2 JMOS performs a number of important tasks for the DSDC and OPAC/OPCC. First, information from the work prints for a job is entered into JMOS. That information is used by JMOS to estimate construction time required to accomplish the job. At the same time, a detailed record of the job's composition is created in the JMOS database. The status of the job is then tracked throughout its life cycle by the system.

2.3 After entering the information from the work prints the user enters into JMOS information necessary to schedule the job. Included is information such as priority of the job, the sequence in which job activities should be worked, required completion dates and resource availability. Once each week the scheduling information for all jobs assigned to a CMC is analyzed by the system and a schedule for those jobs is produced. Then JMOS generates printed schedules and other related scheduling reports.

2.4 One of the scheduling reports generated lists the major material items needed to complete the job. This information can be entered into a material ordering and control system such as the Major Apparatus and Cable System (MACS). (MACS generates new orders for material, tracks outstanding orders and maintains inventory records of major material items in stock). If materials

are available from inventory or when materials from an order are received, JMOS is updated to indicate that materials required for the job are available.

2.5 Before work on a job is started the site is visited (presurveyed) by a field supervisor and necessary adjustments to construction time or materials due to nonstandard conditions are noted. These adjustments are entered into JMOS to allow the construction time estimate and the job record to be updated. The materials changes, if approved, are forwarded to MACS.

2.6 After work on the job is started, daily time and work results are entered into JMOS where they are reconciled with the job specifications and used to update the job status, tabulate lost time and feed the scheduling process. Material usage also will be entered into JMOS to be reconciled with the job specifications and forwarded to accounting to update property records.

2.7 From the information entered into JMOS the system generates a number of engineering and construction force management reports. These reports provide managers with information on such factors as job progress, craft efficiency, supervisor efficiency, scheduling compliance and lost time.

2.8 The next section of this System Description will explain in more detail how JMOS Supports the Job Administration Process.

3. JMOS AND THE JOB ADMINISTRATION PROCESS

3.1 The job administration process can be divided into the 11 basic steps listed below. JMOS will help in all except the first two steps.

1. Project Preparation

2. Detailed Design

3. Analysis of Work Content

4. Construction Scheduling

5. Material Ordering and Control

6. Construction Planning

7. Job Construction

8. Daily Time, Work and Material Reporting

9. Job Tracking

10. Job Completion Reporting

11. Construction Force Management

In the following paragraphs, each of the steps will be briefly described and the use of JMOS in the nine applicable steps will be outlined.

PROJECT PREPARATION

3.2 The first step in the process is project preparation. This step involves producing a package of documentation, called a project, to describe and justify the need for a large job (e.g., over $25,000), called a specific estimate. Included in the project is the estimated broad gauge cost or Detailed Job Pricer Cost of the job, broken down by field reporting account codes and major material items, as well as supporting information such as schematic drawings, cable utilization

data, and economic study results. The project is forwarded to upper management for review and approval before detailed engineering design and construction work would normally begin. When the project is approved it becomes a specific estimate and a copy is forwarded to accounting which authorizes the charging of time and material. The cost estimates are used to update the local district's construction budget and preliminary scheduling of the detailed design and construction work may begin. Major material items with long ordering intervals are identified so that orders can be placed for enough in advance of the construction work.

3.3 While JMOS does not become involved in project preparation, information about the project can be entered into JMOS to assist in managing the job. For example, when first identified, the basic materials and estimated labor for a project will be entered into JMOS. The labor data will be used to generate a long range schedule for working the job based on projected work loads, resource availability, and the due date for the job. The material data will be used by JMOS to identify the long lead time items and trigger orders so the materials will arrive in time to meet scheduled placing dates.

DETAILED DESIGN

3.4 The second step in the job administration process is detailed design, which converts the conceptual design for a job into a physically practical design. The output of this step is a set of work prints that specify the exact material items to be used and construction tasks to be performed in building the job.

Another output is a due date and priority for each job. For a specific estimate, detailed design normally follows approval of the project. For a small job, called a routine order, there is no project preparation and detailed design is the only design step involved. Therefore, for a routine order, the resulting work prints are the vehicle both for approval and construction. JMOS does not become involved in this step of the job administration process.

ANALYSIS OF WORK CONTENT

3.5 In this step, information from the work prints is used to estimate the construction time required to complete the job and calculate the cost of the job. The time estimates are based on standard hours, which represent the average time to perform the work under ideal field conditions. These standard hours are important to the entire process because they are used both for planning and scheduling the construction work and as a base against which construction performance can be measured.

3.6 JMOS provides a great deal of help in this step of the job administration process. Selected information about the job, work prints and each job step on the work prints is entered into JMOS by means of CRT terminal.

3.7 JMOS does three things with the information it receives:

1. It stores the information in a database file in case there is a need to review or change the information at a later time.

2. It uses the information to calculate standard hours associated with each task in each job step.

3. It prints out a series of reports that summarize the standard hours and materials associated with each job step. These reports are for use by the design engineers, engineer manager, OPAC/OPCC supervisor and field supervisors.

3.8 Two items of information entered into JMOS during print processing are the job number and print numbers. Entry of these items establishes the job in the JMOS Master Log. The JMOS Master Log is a database file that is used to track the job and its prints as they move through the

job administration process. After a user has finished entering the information from the work prints into JMOS a command is entered to validate the information. If JMOS finds that the information is valid, the job and prints are automatically statused in the JMOS Master Log as "Entry Validated".

CONSTRUCTION SCHEDULING

3.9 Construction work is scheduled into one or two-week intervals by balancing the available construction resources against the amount of time required and priorities set for all active jobs. Scheduling also entails coordinating many related activities such as the ordering and arrival of materials and the interaction of other forces involved in the jobs (e.g., assignment and central office).

3.10 JMOS supports construction scheduling by doing the time consuming task of balancing available construction resources against the amount of time required and priorities set for the jobs. Information about resources, key dates, priorities and the make-up of jobs is entered into JMOS by means of the CRT terminal. JMOS does three things with the information.

1. It stores the information exactly in the form it was entered in case this data has to be reviewed or changed later.

2. Once each week the information for the set of jobs that are ready for scheduling is analyzed. The sequence of construction activities that make-up each job is examined; key dates and priorities are considered, available resources are assigned, loads are balanced and finally a schedule is produced. The schedule will cover as many weeks (up to one year) as specified by the user.

3. JMOS then prints a series of scheduling reports that can be used by the design engineers, scheduling engineer and the OPAC/OPCC. These include Dispatched Work Reports and the Master Schedule.

3.11 After jobs are initially scheduled the scheduling engineer issues the prints for those jobs to the OPAC/OPCC so they can be presurveyed and then has the JMOS Master Log for each print updated to indicate a status of "Issued To Construction For Presurvey".

3.12 JMOS can schedule jobs and resources for individual CMCs and it also can accomplish "cross-CMC scheduling". Cross-CMC scheduling allows resources that cross CMC boundaries, such as high-production crews and other specialty roving crews, to be shared among the CMCs. To accomplish this JMOS will treat specified groups of CMCs as a single "scheduling entity" for scheduling purposes and then produce separate scheduling reports for each CMC in the entity. Up to 20 CMCs can be included in one scheduling entity.

MATERIAL ORDERING AND CONTROL

3.13 Closely associated with scheduling is the material ordering and control process. Materials should be ordered so that they arrive just prior to their scheduled placement. This involves selecting the proper procurement method (e.g., factory direct, or netted from local stock), maintaining a record of all major material items held in local inventory, and controlling the flow of orders to meet specified material allocation levels.

3.14 The major material items required for each job step are recorded in the JMOS database when the job information is first entered from the work prints. Subsequently, when scheduling information is entered for the job, the status of material for each construction activity (e.g., group of job steps) is indicated as "needed but not ordered, ordered, received, or unnecessary". JMOS will not allow a job activity into the current interval of the schedule unless the materials are received or unnecessary.

3.15 After the scheduling information is entered into JMOS the system will produce a materials report that lists the materials needed for each construction activity in the job. The list of materials can then be entered into a material control system such as the Major Apparatus and Cable System (MACS) which helps the Outside Plant Inventory Administrator (OPIA) select the best source of materials. MACS also will generate requisitions for materials to be purchased, track outstanding orders and update its inventory records when materials are shipped, received or disbursed.

3.16 As materials are ordered and then received the status of materials listed in the JMOS database is updated accordingly. When all materials for a construction activity are received, JMOS can schedule the activity to be worked.

CONSTRUCTION PLANNING

3.17 In this step, the construction organization uses the work prints, the standard hours that were calculated during print processing, scheduling information and material listings to plan the work for the job. A field supervisor visits the work site and presurveys the job to identify such things as potential roadblocks, nonstandard field conditions , and safety hazards. Adjustments are made to the standard hours for the job to account for the field conditions. After adjustment, these standard hours become the objective hours required to complete the job.

3.18 JMOS assists in the construction planning step of the job administration process in several ways. First, for each job JMOS prints copies of certain reports needed for construction planning. These include:

- Preliminary Field Job Plan Report

- Work Task Listings (preliminary)

- Travel, Support and Incidental Time (TSI) Summaries (preliminary)

- Schedule Make-up Reports (preliminary)

The OPAC/OPCC issues a complete set of these reports, along with a copy of the work prints to the field supervisor who will presurvey the job. The complete set of reports along with the work prints is called a Presurvey Package.

3.19 When the Presurvey Package is issued to the field supervisor the JMOS Master Log for the job is updated to a status of "Issued To Field For Presurvey".

3.20 The field supervisor visits the work site, conducts the presurvey, notes any adjustments or change on the appropriate report and returns the presurvey Package to the OPAC/OPCC. The adjustments and changes (except schedule make-up, material or design changes) are entered into JMOS be means of a CRT terminal in the OPAC/OPCC. Based on the adjustments and changes JMOS determines the objective hours associated with each job step and stores that information to be printed on reports used in later steps of the job administration process.

3.21 Once the presurvey changes have been input to JMOS, the JMOS Master Log can be updated to show a status of "Presurvey Complete".

3.22 The Schedule Make-up Report from the Presurvey Package is returned to the scheduling engineer where it is reviewed and changes entered into the JMOS database using a CRT terminal at that location. After the schedule make-up changes are entered, the job will be included in the next weekly scheduling run. If major material changes or design changes are identified by the presurvey, such information is also returned to the scheduling engineer and forwarded to the design engineer.

JOB CONSTRUCTION

3.23 Each week the OPAC/OPCC assigns a set of scheduled jobs to each field supervisor; the jobs are listed on a Dispatched Work Report. On a daily basis, the field supervisor assigns work to each craftperson from the set of scheduled jobs. Back-up jobs are also specified to be worked if all the assigned jobs are completed or if unexpected roadblocks prevent working on assigned jobs.

3.24 JMOS assists in this step of the job administration process by printing the Dispatched Work Reports and the reports needed for the Job Packages, which are issued to the field supervisors. In addition to work prints a job package may include:

- Final Field Job Plan Report

- Work Task List (Final)

- TSI Time Summary (Final)

- Schedule Make-up Report (Final)

3.25 When the Job Package is issued to the field supervisor, the JMOS Master Log for the job is updated to a status of "Issued to Field For Construction".

DAILY TIME, WORK AND MATERIAL REPORTING

3.26 At the start of each work day, field supervisors assign work to their craftpeople by entering the jobs, prints and steps to be worked on the Construction Daily Work Assignments. At the end of each day, the craftpeople use the same form to indicate total time spent, time worked on each job step, account codes associated with each job step, which steps are complete, the amount of and reasons for any lost time and the materials placed or removed on each job step. The field supervisor verifies the reported information and forwards the form to the OPAC/OPCC.

3.27 The key information regarding time, work and materials is entered into JMOS by using the OPAC/OPCC's CRT terminal. JMOS does several things with the time and work data.

1. The time entered for payroll purposes is compared with the time reported against the job steps (and distributed across account codes) to insure that the two sets of hours balance.

2. The time entered for payroll purposes is formatted and sent directly from JMOS to the mechanized time reporting system (MTR) via an interface database. This eliminates the need for the paper reporting.

3. The hours spent on each job step are accumulated in the JMOS database for use in the last three steps of the job administration process: job tracking, job completion and construction force management.

3.28 Similarly JMOS does several things with the materials reported information.

1. The materials reported are compared (reconciled) with the materials entered, and consequently authorized, during job entry. If what is reported doesn't match what was authorized, then a change in plan (CIP) must be initiated in the system in order for JMOS to accept the data reported. The CIP automatically becomes part of the job record.

2. Reports are generated by JMOS to provide information to managers about the status of material reporting.

3. As with the time and work data, information regarding materials reported is accumulated in the JMOS database for use in subsequent steps in the job administration process: job

tracking and job completions. Materials which have been reconciled are automatically disbursed to BellSouth's Financial Processor (FP). The material reporting feature in JMOS will greatly reduce discrepancies among field inventory records, Perpetual Inventory Records, Continuing Property Records and Plant Location Records.

JOB TRACKING

3.29 The OPAC/OPCC tracks the progress of jobs as they are worked. Reports are prepared to reflect information such as total hours charged, objective hours worked, objective hours remaining.

3.30 When JMOS is used the information entered during daily time, work and material reporting is automatically used by the system to track jobs. Remaining objective hours are derived for use by the scheduling program. An up-to-date job progress report is immediately available on-line showing objective hours worked and hours remaining. A report also is available showing steps on a job for which materials have been disbursed.

JOB COMPLETION

3.31 In the OPAC/OPCC job step completions are tracked by posting the office copy work prints each day. When all job steps on a job or print have been completed, the OPAC/OPCC notifies the accounting, engineering, assignment and repair centers, which then update all necessary records. Then the OPAC/OPCC can put all the records for the job in the archives.

3.32 Job step completion and material disbursement information will be entered into JMOS during daily reporting. When a job is complete and all materials disbursed, the information on hours and materials expended will be verified to accounting. This transaction will indicate that all work on a particular job has been completed and the job is considered officially finished. This completion notice to accounting will indicate that no further charges should be accepted against the job. Accounting can then update the continuing property records, accumulate job costs and compute corporate productivity and cost results.

3.33 After a job is completed JMOS can be used to produce a job-closeout package of reports. The package, along with the work prints, contains all the essential information about the job needed for the archives. Once the job-closeout package has been printed for the archives the job can be purged from the JMOS database using a purge program provided with the system. However, an abbreviated record of the job will remain on-line in the Master Log.

CONSTRUCTION FORCE MANAGEMENT

3.34 In order to manage the construction forces effectively the OPAC/OPCC must develop various reports to indicate the performance of each craftperson and supervisor. Also reports on lost time are accumulated to help managers use the forces more effectively.

3.35 With JMOS the reports on performance and lost time are produced automatically from the data entered during job entry and time and work reporting. In addition reports are automatically produced to show how well each supervisor is complying with the schedule that was developed for that supervisor. The following reports are produced:

- Lost Time Log

- Craft Performance Log

- Monthly Craft Performance Report

- Monthly Supervisor Performance Report

- Scheduling Compliance Report

4. SPECIAL FEATURES

INTERNAL REFERENCE TABLES

4.1 When performing its work, JMOS uses over 20 internal reference tables. There are three kinds of tables.

1. One type of table is used to verify that a user has entered acceptable information into the system. For example when a user encodes a job, JMOS compares the materials to be placed with a table of all the materials that are acceptable within BellSouth. If the materials aren't found in the table, the job can't be encoded. Similarly, during time and work reporting, JMOS compares the employee's name entered with a master table of all construction employees. If the name entered can't be found, JMOS will not accept the time reported for that employee.

2. A second type of table provides data needed for computations by the system. As an example, JMOS extracts standard time increment values from the STI table in order to compute standard hours for each job step. Similarly values are extracted from tables to compute dollar costs associated with a job.

3. A third type of table allows the TELCo to set the standard way JMOS is to operate for the company or for an OPAC/OPCC. For example, the standard placing method can be specified to be used for placing aerial cable, which is then reflected in the computation of STIs. BellSouth can specify which reports it wants to have included in the package of reports printed for presurvey and in the package of reports needed to work the job.

REPORT WRITER CAPABILITY

4.2 In addition to the many standard reports that are available from JMOS, some special reports for particular management needs may be desired. The report writer capability will allows BellSouth to interface a general report writing system such as FOCUS with JMOS to produce these special reports. To accomplish this, JMOS will place selected data from its databases in files that can be accessed by the end user. The user can then use the data files with FOCUS to create special reports.

REORGANIZATION PROGRAM

4.3 If BellSouth consolidates CMCs, changes the assignment of wire centers to CMCs or in some other way reconfigures its CMC organization, the JMOS databases associated with those CMCs also must be reorganized. A special off-line (batch) program is provided to accomplish this reorganization of the JMOS databases in a timely fashion.

JMOS MAIL TRANSACTION

4.4 JMOS includes an electronic mail feature that makes it easy for users of the system to communicate with each other. Messages can be sent from any JMOS CRT terminal to any JMOS printer. Suppose, for example, that the JMOS administrator (staff person) has added a new material item to the material table and wants to inform a DSDC called "Metro" of the change. The administrator can enter a message at any JMOS terminal and send it to DSDC-Metro. The message will be printed on the primary printer for that DSDC.

5. JMOS HARDWARE AND SOFTWARE DESCRIPTION

HARDWARE REQUIRED

5.1 JMOS is an application on an IBM 3081, 3033 or equivalent mainframe computer located in the data center. Hardware sizing estimates are made for a 250 craftperson entity. If construction jobs for 250 craftspeople are administered by the system, the following load on the computer is projected for JMOS.

1.   4500 on line transactions per **day** (8 hours).

2.   650 CPU sec. per **day** (85 CPU sec. per hour) for on-line transactions (IBM 3081k).

3.   600 CPU sec. per **week** for batch/BMP transaction (IBM 3081k). This is primarily for weekly scheduling runs with a small portion for updating reference tables and reorganization runs. Purge runs and report writer extract runs are not included.

4.   60 CPU sec. per **month** for CFMS reports.

5.   750 Mbytes of disk storage.

5.2 In most cases JMOS does not require an entire mainframe, but shares the computer with other applications.

5.3 The terminals for JMOS are Dataspeed 5540s, Dataspeed 40/4, IBM 3270s or equivalent. Terminals are located in each DSDC and each OPAC/OPCC. Terminals in the DSDC are used for job entry and schedule information entry and for querring the system. Terminals in the CMC are used for time, work and material reporting and entering presurvey changes. Supervisors also use the terminals to make on-line queries to the system. The tasks to be accomplished via the terminals in the DSDC and CMC are discussed at greater length in the following paragraph on the JMOS Personnel Subsystem.

5.4 BellSouth employs a terminal sharing system network. The terminals located in the DSDC and CMC can be shared with other applications using asynchronous terminals. Normally, the terminals are not used constantly and the terminal sharing system allows these terminals to be used for other tasks in the DSDC and CMC.

5.5 One printer is required in each DSDC and two in each CMC in order to extract JMOS reports. The printers must handle reports up to 132 characters wide.

JMOS SOFTWARE

5.6 The operating system for JMOS is MVS (IBM's Multiple Virtual System). The database management system is IMS (IBM's Information Management System).

5.7 The programming language for the Job Control Module is PL/1, except for the scheduling algorithms which are programmed in FORTRAN.

6. JMOS PERSONNEL SUBSYSTEM (PSS) DESCRIPTION

6.1 The personnel subsystem of JMOS consists of four groups of people who use, operate, maintain and administer the system. They will be referred to as:

(a) System Users

(b) System Operators

(c) System Maintainers

(d) System Administrators

SYSTEM USERS

6.2 System users include the following categories of personnel who interface directly with a JMOS terminal, supervise personnel who interface with a JMOS terminal, provide information to be entered into JMOS or use reports generated by JMOS.

A. DISTRIBUTION SERVICES DESIGN CENTER (DSDC) PERSONNEL:

1. Job entry personnel enters job information into JMOS using a CRT terminal, extracts reports via a local printer, and enters transactions in the terminal to status jobs in the JMOS master Log. Job entry personnel must be able to correctly read work prints.

2. The supervisor of job entry personnel who assigns work and provides guidance when problems or exceptions occur.

3. The design engineers who initiate jobs and specify scheduling information. The design engineers along with the engineer manager also review the Approval Package of reports generated for each job by JMOS and monitor the process of jobs via other reports generated by JMOS.

4. The scheduling engineer who reviews the schedule make-up, priorities and resources for jobs and monitors the schedule progress via a set of scheduling reports generated by JMOS. The scheduling engineer may also monitor certain aspects of scheduling progress via CRT displays that can be requested on the CRT terminal.

5. A scheduling data entry person who performs the following types of tasks.

    1. Enter initial scheduling information into JMOS using a CRT terminal. The information is entered from coding forms prepared by the design engineer.

    2. Enter scheduling update information into JMOS when Schedule Make-Up Reports are returned from presurvey of the job.

    3. Extract scheduling reports via a local printer.

    4. Enter JMOS Master Log transactions to update the status of the job (e.g., Issued To Construction For Presurvey). Enter into JMOS update information regarding material status and road blocks.

    5. Enter transactions into JMOS to initiate the weekly schedule run.

NOTE: The scheduling data entry person may be the same as the job entry person mentioned above.

B. CONSTRUCTION MANAGEMENT CENTER (CMC) PERSONNEL

1. Presurvey data entry personnel who perform the tasks listed below.

    a. Extract from JMOS the reports needed for the Presurvey Package. The person then combines this set of reports with the work prints to make up the Presurvey Package and issues that package to the appropriate field supervisor for presurvey of the job.

b. Enter into JMOS the changes noted by the field supervisor during presurvey. These changes are entered via a CRT terminal.

c. Return to the scheduling engineer the Schedule Make-up Report (part of the Presurvey Package) so any changes to the scheduling make-up can be encoded.

d. Extract from JMOS the set of reports required by OPAC/OPCC supervision to monitor schedule progress and job progress. These reports will be printed at a local OPAC/OPCC printer.

e. Extract from JMOS the set of reports that are included in the final Job Package to be issued to the field supervisor when the job is to be worked.

f. Enter transaction via the CRT terminal to update job status in the JMOS master log.

g. Time, work and material data entry personnel who perform the following tasks.

   a. Receive Daily Work Assignments from field supervisors. Extract information regarding time, work and material from those schedules and enter the information into JMOS via a CRT terminal.

   b. Extract from JMOS selected reports regarding scheduling status, lost time, craft performance, and field supervisor performance as these reports are needed by CMC supervision.

   c. Compute "scheduling adjustment factors" for each field supervisor.

       NOTE: The time, work and material data entry person may be the same as the presurvey data entry person.

   d. The field supervisors who take the Presurvey Packages to the job sites, presurvey the jobs, note changes on appropriate reports/work prints in the packages and return the packages to the OPAC/OPCC. Subsequently, the field supervisors take the Job Packages to the field when the job is worked.

   e. The construction supervisors and construction manager who review and approve changes noted during presurvey. The construction supervisors and construction manager also review reports extracted from JMOS to monitor schedule progress, job progress, lost time, etc. In addition the construction supervisor is responsible for entering into JMOS information regarding the construction resources available (updated once per week prior to scheduling run).

SYSTEM OPERATORS

6.3 System operator personnel perform activities such as the following:

(a) Monitor operation of the computer and identify operational problems regarding JMOS.

(b) Initiate load program for bulk loading database, tables etc.

(c) Initiate periodic program runs such as the weekly scheduling run.

SYSTEM MAINTAINERS

6.4 System maintenance personnel perform activities of the following nature.

(a) Install and test JMOS software on the computer, including new releases.

(b) Assist in problem diagnosis and system recovery.

(c) Conduct performance analysis and tuning.

(d) Perform preventive and corrective maintenance.

SYSTEM ADMINISTRATORS

6.5 System administration personnel perform activities of the following sort.

(a) Coordinate activities of all organizations involved in installation and operation of JMOS.

(b) Establish cutover schedule of new JMOS releases.

(c) Coordinate the solution problems involving JMOS.

(d) Establish and verify accuracy of data for JMOS internal reference tables that is to be supplied and updated.

(e) Enter and update JMOS internal reference table data.

7. GLOSSARY

Account Codes

- General codes used for charging or reporting time and material. The four basic codes are:

- C - construction of new plant

- X - removal of existing plant

- M - rearrangement of existing plant

- R - repair of existing plant.

Byte

- A group of binary digits that a computer processes as a unit.

Change In Plan (CIP)

- A construction change made to the work print which was not authorized by engineering prior to construction. The CIP must also be authorized by engineering to make it official. A CIP becomes part of the job record and audit trial.

Construction Daily Work Assignment (CDWA)

- The detailed plan of work assigned by the field supervisor to a construction crew or craftperson on a given day.

Dispatched Work Report (DWR)

- A report that specifics the jobs or parts of jobs scheduled to be worked by a given field supervisor's forces during the next scheduling period.

Job or Job Order

- Any order (set of work prints) issued by engineering to construction to perform work in the outside plant network. A job may be either a routine order or specific estimate.

Job Step

- An individual placing or splicing function that takes place at a specific location and is all charged to the same account code. Examples are placing an individual piece of cable or completing an individual splice.

Lost Time

- Craft or contractor time spent that did not contribute to the completion of the job.

Master Log

- A file in JMOS that keeps track of the status of a job as the job proceeds through the job administration process (e.g., job entry validated or released to construction for presurvey). In a few cases the status of a job is set automatically when a user enters JMOS to accomplish some task. In most cases the status of a job will be set by a user displaying a Master Log mask on a CRT screen, entering to designate the status and sending the data to a database in JMOS.

Objective Hours

- The expected number of hours required to complete a job step under actual conditions at the work site and with the available work crew. Calculated by adding a field adjustment to the standard hours computed for a step.

Presurvey

- The examination of the work print(s) and visit to the work location by a field supervisor in order to develop a plan for working a job.

Project

- The package of documentation prepared by an engineer to describe and justify a job of specific estimate proportions. The project must be approved

PRIVATE/PROPRIETARY/SECURE

No disclosure outside BellSouth except by written agreement. Must be securely stored when not in use.

by upper management before detailed design and construction work on the specific estimate can begin.

Routine Order

- A relatively small job estimated to cost less than a fixed amount. This amount varies from $10,000 to $50,000 depending on the TELCo. $25,000 is common.

Scheduling Entity

- A group of CMCs that are treated like a single CMC during the scheduling process. This allows certain resources to be shared among the CMCs in the resulting schedule.

Specific Estimate

- A relatively large job estimated to cost more than a fixed amount. This amount varies from $10,000 to $50,000 depending on the TELCo. $25,000 is common.

Standard Hours

- The expected number of hours required to complete a job step under ideal conditions with an ideal work crew. Calculated by analyzing each job step into tasks and determining the given standard time increment for that task. Then the standard time increments for all tasks in a job step are summed to derive standard hours for the job step. Standard hours for job steps may be summed to derive standard hours for a job.

Standard Time Increment (STI)

- The average time required to perform a given task associated with a job step, assuming ideal conditions.

Work Print

- A diagram prepared by engineering, showing the work to be done by construction forces.

APPENDIX B

1.00 GENERAL

The MTR system serves as the work reporting system for all employees who report labor classification information. This includes:

> plant occupational employees,
>
> plant management work reporters,
>
> engineering work reporters (JFC 3XX0-3XX7)
>
> any other employees performing plant labor functions
>
> any employee assigned job function codes which begin with "4" and end with a digit "0" through "7" (e.g. 4120)
>
> engineering clerical support

This section describes the appropriate labor reporting procedures to be followed by non-management and management plant labor work reporters.

1.01 For simplicity throughout these procedures, all 4 and 6 character Job Function Codes will be referenced as 4 characters.

1.02 Work reports for non-management plant work reporters should be forwarded to the input location daily on one of the following forms:

> 1) RF-152, Labor Classification Report - This form should be used to report labor classification information only.
>
> 2) RF-152-B, Time-Labor Report - This form should be used to report both payroll exceptions and labor classification information.
>
> 3) RF-152-I, Time-Labor Report (I & M Forces) - This form is used to report payroll exceptions and labor classification information for Southern Bell employees working in Installation and Maintenance. Information reported on the reverse of this form is required by the FCC to provide an audit trail of account codes charged and time expended to these account codes per job. Form RF-152-I should be retained in accordance with guidelines specified in Executive Instructions 7, Section 2, Appendix A.

Instructions for preparing the labor classification reports listed above are contained in Part 5, Section 2.

1.00 GENERAL (Continued)

1.03 While work reports for management plant work reporters may be forwarded to the input location weekly on Form RF-152, Labor Classification Report, it is strongly recommended that reporting occur daily. If desired, management work reporters may also report labor classification information in the Labor Classification section of Forms

RF-152-B and RF-152-I; however, the Payroll FASC and Tax Exceptions section of these forms should only be used for non-management payroll exceptions. Both payroll and labor exceptions for non-management employees must be reported daily. Payroll exceptions for management employees should be reported on Form RF-151, Management Exception Report.

1.04 Some management and non-management plant work reporters who work the same scheduled hours and routinely charge these hours to the same labor code(s) can establish labor profiles in MTR thus eliminating daily reporting requirements. However, all/any exceptions to the profile must be reported. See Part 5, Section 3 for information on establishing a labor profile.

The remainder of this section covers procedures that should be used by plant work reporters when performing functions other than their normal work functions.

2.00 PERFORMING NON-PRODUCTIVE FUNCTIONS

2.01 Performing Administrative Clerical or Supervisory Functions

When a plant labor work reporting employee performs administrative clerical or supervisory functions (non-productive functions) within the "4XXX" Job Function Code series, the employee's normal Job Function Code and an Environment Code of "9" should be reported in the Job Function Code column of the appropriate exception report (Form RF-150, Non-Management Exception Report; Form RF-151, Management Exception Report; or the Payroll, FASC and Tax Exceptions Section of the appropriate Time-Labor Report). Remember that a report of code "RD" is also required to actually generate the relieving differential dollars.

2.00 PERFORMING NON-PRODUCTIVE FUNCTIONS (Continued)

2.02 Examples

Example 1 - Non-Management Employee Relieving Supervisor (RD)

A non-management plant labor work reporting employee is scheduled to work 11:00 a - 3:00 p, 4:00 p - 8:00 p. On Monday, the employee relieves his supervisor from 2:00 p - 4:00 p. To report this exception, the employee should enter his dominant Job Function Code (4110) and an Environment Code of "9" in the Payroll, FASC, and Tax Exceptions section of the exception report as follows:

PAYROLL, FASC, AND TAX EXCEPTIONS

TIME RPT. CODE	START TIME	END TIME	JOB FUNCTION CODE/ ENVIRONMENT CODE
SC	2:00 p	4:00 p	4110-9

NOTE: If the situation were for a whole day then the start and end times should be left blank.

NOTE: This employee should also report a relieving supervisor

differential (code RD) in the Differentials and Allowances section of the

appropriate version of the Time-Labor Report. Code "RD" will result in pay for the employee while the environment code of "9" will ensure the transaction is journalized to the correct account.

The employee charges the remaining hours of his scheduled day (6 hours) to

Field Code 61T.

The Labor Classification section of Form RF-152-B should show:

LABOR CLASSIFICATION

HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
6.00	61T		

2.02 Examples (Continued)

Example 2 - Management Performing Supervisory Functions

A management plant labor work reporting employee is scheduled to work 7:30 a - 11:30 a, 12:30 p - 4:30 p, Monday - Friday. On Monday, October 14, the employee performs supervisory functions for the entire day. To report this exception, the employee should enter his dominant Job Function Code (4111) and an Environment Code of "9" in the Payroll, FASC, and Tax Exceptions section of the exception report.

PAYROLL, FASC, AND TAX EXCEPTIONS

MONTH	DAY	TIME RPT. CODE	START TIME	END TIME	JOB FUNCTION CODE/ ENVIRONMENT CODE
10	14	SC	:	:	4111-9

NOTE: An environment code of "9" is used to remove the employee's time from productive hours.

Example 3 - Non Mgmt. Work Reporter Performing Non-

Work Reporting Functions

A non-management plant labor work reporting employee is scheduled to work 7:30 a -
11:30 a, 12:30 p - 4:30 p, Monday - Friday. On Monday, October 14, the employee
performs a non-work reporting job function for the entire day. To report this exception,
the employee should enter the Job Function Code/Environment Code (2028-0) of the
job being performed in the Field Code/Function Code column of Form RF-152-B. The
Responsibility Code of the supervisor to whom the employee is loaned is ABC30000.

LABOR CLASSIFICATION

HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
8.00	2028-0		ABC30000

NOTE: If this situation were for a partial day, the remaining hours of the employee's
scheduled tour should be charged to the appropriate Field Code.

2.02 Examples (Continued)

Example 4 - Mgmt. Work Reporter Performing Non-Work Reporting Functions

A management plant labor work reporting employee is scheduled to work 7:30 a -
11:30 a, 12:30 p - 4:30 p, Monday - Friday. On Monday, October 14, the employee
performs a non-work reporting job function from 7:30 a to 11:30 a. To report this
exception, the employee should enter the Job Function Code/Environment Code (2311-
0) of the job being performed in the Field Code/Function Code column of the Labor
Classification Report. The Responsibility Code of the supervisor to whom the
employee is loaned is ABC40000.

LABOR CLASSIFICATION

MONTH (MM)	DAY (DD)	HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
10	14	4.00	2311-0		ABC4000
10	14	4.00	257C		

The employee charges the remaining hours of his scheduled day (4 hours) to Field
Code 257C as shown above.

NOTE: If this situation were for a full day, then all hours worked should be reported

to the JFC/EC of 2311-0.

3.00 PERFORMING UNCLASSIFIED PRODUCTIVE FUNCTIONS

When a plant labor work reporting employee performs unclassified productive functions the appropriate SPFC must be entered in the Field Code/Function Code column of the appropriate labor classification report. See the FASCode Manual for complete narratives (including exclusions) for the following SPFCs for reporting unclassified productive time:

SPFC TITLE

5532 - Miscellaneous Meeting and Travel-Labor

5533 - Paid Union Activities (also see code "UAP",Part 3, Section 4 of these procedures).

3.00 PERFORMING UNCLASSIFIED PRODUCTIVE FUNCTIONS (Continued)

5535 - Training - Labor (General)

NOTE: On-the-job training and job-specific classroom training should be reported direct to the final Maintenance Code appropriate for the training received except for Customer Premise Equipment (CPE). Training for CPE should be reported to the appropriate Special Purpose Function Code 5CFXXX, Other Expense-Other. (Reference: FASCode Manual, 5CFX, Miscellaneous Nonregulated Expenses)

If Administrative Authorization Code SA is reported with on-the-job training and/or job specific classroom training, these hours will be summarized on the On Line Access Plant Report Forms 4460S, 4460G-M, and 4460G-Y/MTR Statistics and Overtime Summary.

5536 - Other Unclassified Productive Costs-Labor

No authorization or billing indicator should be reported with the unclassified productive SPFCs.

3.01 Example 1 - Management Plant Labor Work Reporter Attending Miscellaneous Meetings

A management plant labor work reporting employee is scheduled to work 6:30a - 11:30a, 12:30n - 3:30 p, Monday through Friday. On Wednesday, October 14, this employee attends a miscellaneous meeting for the entire day. To report this exception, the employee should enter the appropriate SPFC for miscellaneous meetings (5532) in the Field Code/Function Code column of the labor report as follows:

LABOR CLASSIFICATION

MONTH (MM)	DAY (DD)	HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
10	14	8.00	5532		

3.00 PERFORMING UNCLASSIFIED PRODUCTIVE FUNCTIONS (Continued)

3.02 Example 2 - Non-Management Plant Labor Work Reporter Participating in Union Paid Activities

A non-management plant labor work reporting employee is scheduled to work 8:00 a - 11:30 a, 12:30 p - 5:00 p. On Tuesday, October 15, this employee participates in union paid activities from 1:00 p until 5:00 p. To report this exception, the employee should enter code UAP in the Payroll FASC, and Tax Exception section of the appropriate Time-Labor report as follows:

PAYROLL, FASC, AND TAX EXCEPTIONS

TIME RPT. CODE	START TIME	END TIME
UAP	1:00 p	5:00 p

In addition, this employee must report SPFC 5533 in the Field Code/Function Code column of the Labor Classification section of the time-labor report as follows:

LABOR CLASSIFICATION

HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
4.00	5533		

4.00 PERFORMING OTHER MAINTENANCE FUNCTIONS

When a plant labor work reporting employee performs Other Maintenance functions, SPFC 5539 should be reported in the Field Code/Function Code column of the appropriate Labor Classification Report. (See FASCode Manual for exclusions to this code.)

4.01 Example - Non-Management Plant Labor Work Reporter Performing Other Maintenance Functions

A non-management plant labor work reporting employee is scheduled to work 7:30 a - 11:30 a, 12:30 p - 4:30 p, Monday through Friday. This employee spent the entire day taking physical inventory of telecommunications equipment.

4.01 Example - Non-Management Plant Labor Work Reporter Performing Other Maintenance Functions - continued

The Labor Classifications section of this employee's Time-Labor report should be completed as follows:

LABOR CLASSIFICATION

HOURS	FIELD CODE OR FUNCTION CODE	GEO. LOCATION	RESPONSIBILITY CODE CHARGED
4.00	5539		